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THE RANELLIIDAE (GASTROPODA: CAENOGASTROPODA) IN THE SIENESE PLIOCENE (**)

KEY WORDS: Gastropoda, Renellidae, Pliocene, Sienese

Riassunto

Nel bacino di Siena vivevano durante il Pliocene 11 specie di Ranellidae, alcune delle quali estremamente rare ed interessanti. Vengono figurate tutte le specie e descritte *S. tuberculifera* e *D. grasi*.

Abstract

During the Pliocene 11 species of Ranellidae lived in Siena basin. Some of them are very interesting and rare. The author represents all species and describes particularly *S. tuberculifera* and *D. grasi*.

The Ranellidae currently includes more than 160 species distributed in all the seas of the globe. The Atlantic Ocean is populated by 39 different taxa (Garcia-Talavera, 1987) and the Mediterranean by six species (Sabelli *et alii*, 1990).

The family is well represented in Sienese Pliocene deposits by the following taxa.

Family RANELLIIDAE Gray, 1854

Subfamily **Ranellinae** Gray, 1854

Genus **Ranella** Lamarck, 1816

Ranella olearia (Linnaeus, 1758)

Subfamily **Cymatiinae** Iredale, 1913

Genus **Charonia** Gistel, 1848

Charonia lampas (Linnaeus, 1758)

Genus **Cymatium** Roeding, 1798

Subgenus **Monoplex** Perry, 1811

Cymatium affine Deshayes, 1833⁽¹⁾

Cymatium distortum (Brocchi, 1814)

Cymatium doderleini D'Ancona, 1873

Cymatium parthenopeum (Von salis, 1793)

⁽¹⁾ Various Authors think that fossil specimens are a form or a variety of living *C. corrugatum* (Lamarck, 1822)

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Subgenus ***Turritriton*** Dall, 1904

Cymatium heptagonum (Brocchi, 1814)

Genus ***Sassia*** Bellardi, 1872

Sassia apenninica (Sassi, 1827)

Sassia tuberculifera (Bronn, 1831)

Subfamily **Personinae** Gray, 1854

Genus ***Distortio*** Roeding, 1798

Distortio grasi (Bellardi, 1872)

Distortio tortuosa (Borson, 1821)

One of the most interesting features of the family is the long larval life which has enabled the dispersal of many species in most of the world's seas. In fact many Ranellidae regarded as cosmopolitan, or more correctly, pantropical, such as *Ranella olearia*, *Charonia lampas* and *Cymatium parthenopeum*, were already present in the area corresponding to present Mediterranean basin in the Miocene. Curiously, two subspecies of *Sassia apenninica*, *S.a. nassariformis* (G.B. Sowerby, 1902) and *S.a. remensa* (Iredale, 1936), live along the South African and Western Pacific coasts respectively.

Among the great number of species from the Siena area, only one, *S. apenninica*, was probably present in the Oligocene. Wide geographical diffusion, from the basin of Aquitania, to the Precarpathians, did not occur until the Miocene.

Fig. 1 - *Ranella olearia* (Linnaeus, 1758), Armaiolo.

Fig. 2 - *Sassia apenninica* (Sassi, 1827), Armaiolo.

Fig. 3 - *Sassia tuberculifera* (Bronn, 1831), Armaiolo.

Fig. 4 - *Cymatium heptagonum* (Brocchi, 1814), Armaiolo.

Fig. 5 - *Cymatium affine* Deshayes, 1833, Larniano.

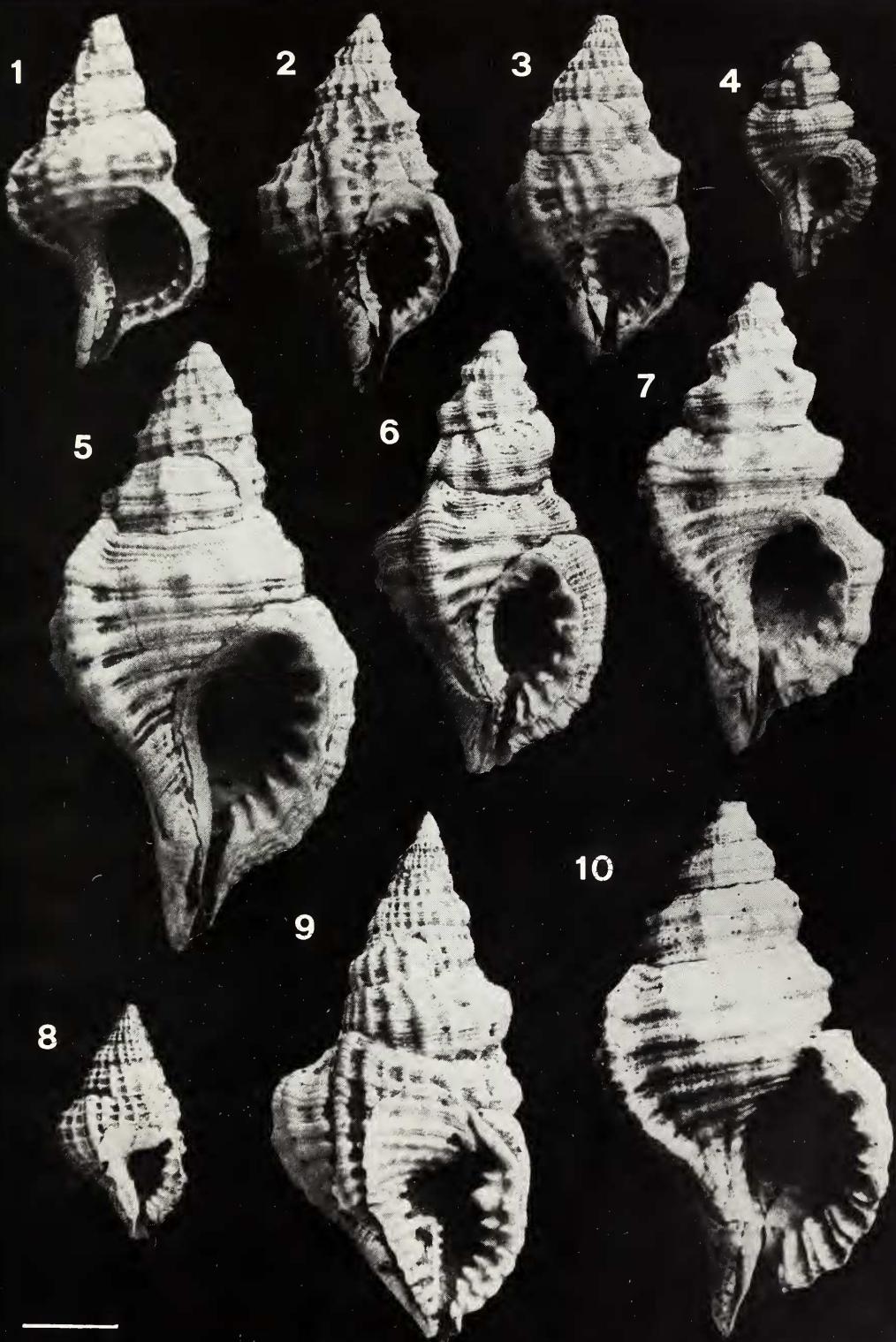
Fig. 6 - *Cymatium doderleini* D'Ancona, 1873, Larniano.

Fig. 7 - *Cymatium distortum* (Brocchi, 1814), Larniano.

Fig. 8 - *Distortio grasi* (Bellardi, 1872), Armaiolo.

Fig. 9 - *Distortio tortuosa* (Borson, 1821), Terre Rosse.

Fig. 10 - *Cymatium parthenopeum* (Von Salis, 1793), Armaiolo.



1 cm

Besides the already mentioned species still present today in the Mediterranean Sea, we find various species spread in the Miocene, *C. affine*, *C. distortum*, *S. tuberculifera* and *D. tortuosa*. Three species are proper to the Pliocene: *C. doderleini*, *C. heptagonum* and *D. grasi*.

Of zoogeographical interest is the group of species belonging to the subgenus *Monoplex* and *Turritriton*, typical of tropical zones, of which only *C. parthenopeum* is still found in the Mediterranean after the Pliocene and the Quaternary climatic variations.

The habitat of the various species of Ranellidae varies greatly. It can be well defined for recent species, and some interesting data on the fossils can be deduced from the deposits in which these species are more common. *D. tortuosa* lived on fine sands, sometimes mixed with clay.

The *Cymatium* are generally found in deeper deposits, but never reach considerable depth. In particular *C. doderleini* and *C. distortum* can be considered euryoecious and eurybathic, because present in both superficial and deep facies.

Two species, *Sassia tuberculifera* and *Distorsio grasi* are of particular interest because of their rarity and the lack of published information.

***Sassia tuberculifera* (Bronn, 1831)**

Tritonium tuberculiferum Bronn, 1831; pag. 32.

Triton nodulosum, Michelotti, 1847; pag. 253 fig. 11.

Triton Tuberculiferum, D'Ancona 1873; pag. 185, tav. 10, fig. 6.

Thick shell, with seven slightly convex whorls, separated by clear sutures. Sculpture consists of varices and two or three axial ridges which give rise to many tubercles at their point of intersection with the spiral ribs. The opening is not very large, and is endowed with several teeth both on the columellar and labial side. The siphon is quite evident.

Shape and dimensions are very similar to those of *S. apenninica*. The major differences concern the protoconch and the sculpture. *S. apenninica* has smooth surface or very fine ribbons which assume a major consistency in *S. tuberculifera*; moreover the protoconch is very large in *S. apenninica*, smaller and formed by a larger number of whorls in *S. tuberculifera*.

The two species also differ in habitat. *Sassia apenninica* is normally found in the clays of deep circalittoral or bathial, while *S. tuberculifera* is found in the circalittoral or even in fine sands mixed with clay.

Material examined: Many specimens in the clays of Armaiolo (Rapolano SI).

***Distortio grasi* (Bellardi, 1872)**

Persona grasi, D'Ancona, 1873; pag. 188, tav. 16, fig. 1.

Persona grasi, Ferrero Mortara et alii, 1981; pag. 56, tav. 7, fig. 3.

Very small shell, with about seven not very irregular convex whorls, separated by quite evident sutures. Sculpture consisting of equally strong axial and spiral ribs giving a cancellate surface. Last whorl very large, with short, but evident siphonal canal. Aperture irregular, with teeth on both columellar and labial side.

D. grasi differs from *D. tortuosa* by its smaller size, different sculpture and different habitat. *D. grasi* is associated with bathyal clays, whereas *D. tortuosa* lives in the upper levels of infralittoral and circalittoral environments. One specimen of this rare species was found by Lawley in the clays of deep facies at Coroncina (DE STEFANI, 1877).

Material examined: one specimen near Armaiolo (Rapolano SI).

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